

## **REMARKS/ARGUMENTS**

### **Claim Amendments**

The Applicant has amended claims 1, 15, 20 and 27. Claims 1-29 are pending in the application. Favorable reconsideration of the application is respectfully requested in view of the foregoing amendments and the following remarks.

### **Claim Rejections – 35 U.S.C. § 102(b)**

Claims 1-2, 7-8, 15-17, 22-23, and 27-29 stand rejected under 35 U.S.C. 102(b) as being anticipated by Shaw, Richard, L (WO 9939254, hereinafter Shaw). The Applicants respectfully traverse the rejections of these claims.

The Shaw reference discloses a method and architecture for interfacing to a low level device driver in an operating system with a user mode and a supervisor mode. The device driver is located in the user mode of the operating system. Shaw incorporates device driver wrappers to emulate an API environment to reduce or eliminate modifications for the device driver.

The Applicant respectfully directs the Examiner's attention to amended claim 1.

1. (Currently Amended) A network device driver architecture for enabling access between operating system kernel space and a network interface controller (NIC) as well as between user space and said NIC, comprising:

a kernel-space device driver adapted for enabling access between kernel space and user space via a kernel-space-user-space interface; and

user-space device driver functionality adapted for enabling direct access between user space and said NIC via a user-space-NIC interface, wherein the user-space device driver functionality provides direct, zero-copy user-space access to the NIC, and said user-space device driver functionality adapted for interconnecting said kernel-space-user-space interface and said user-space-NIC interface to enable integrated kernel-space access and user-space access to said NIC. (emphasis added)

The Applicant respectfully submits that the Shaw reference does not disclose, teach or suggest the provision of zero-copy user-space access to the NIC.

The Applicant discloses the use of user-space and kernel-space interfaces to enable sharing of an NIC by the user-space and kernel space access. A user-space device driver functionality provides zero-copy user-space access to the NIC. This reduces or eliminates message copying, per-message interrupts and other kernel overhead. The Shaw reference does not teach or suggest the limitation of providing zero-copy user-space access to the NIC. The applicant respectfully requests the withdrawal of the rejection of claim 1 and dependent claims 2 and 7-8.

Additionally, independent claims 15 and 27 have been amended in a similar manner and both claims are analogous to claim 1, having similar limitations. The Applicant respectfully requests the withdrawal of the rejection of claims 15 and 27 and the respective depending claims 16-17, 22-23, and 28-29.

#### **Claim Rejections – 35 U.S.C. § 112**

Claims 15 and 27 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter as the invention. Claims 15 and 27 have been amended to correct the deficiencies.

Claim 20 has been amended to correct the antecedent basis for the limitation "transmit buffer".

#### **Claim Rejections – 35 U.S.C. § 103 (a)**

Claims 3-6, 18-21 and 24-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Richard (WO9939254) in view of Cezary Dubnicki et al ("Software support for virtual memory-mapped communication"). The Applicant respectfully traverses the rejection of these claims.

The Shaw reference as discussed above does not provide the limitation of zero-copy user-space access to the NIC as claimed in the respective amended, independent claims 1, 15 and 27. The Dubnicki reference also fails to disclose this limitation. This being the case, the Applicant respectfully requests the withdrawal of the rejection of these claims

Claims 9-11, 12-14 and 24-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Richard (WO9939254) in view of Massa et al (US 6658469)(hereinafter, Massa). The Applicant respectfully traverses the rejection of these claims.

The Shaw reference as discussed above does not provide the limitation of zero-copy user-space access to the NIC as claimed in the respective amended, independent claims 1, 15 and 27. The Massa reference also fails to disclose this limitation. This being the case, the Applicant respectfully requests the withdrawal of the rejection of these claims.

#### **Prior Art Not Relied Upon**

In paragraph 9 on page 12 of the Office Action, the Examiner stated that the prior art made of record and not relied upon is considered pertinent to the Applicant's disclosure.

### CONCLUSION

In view of the foregoing remarks, the Applicant believes all of the claims currently pending in the Application to be in a condition for allowance. The Applicant, therefore, respectfully requests that the Examiner withdraw all rejections and issue a Notice of Allowance for all pending claims.

The Applicant requests a telephonic interview if the Examiner has any questions or requires any additional information that would further or expedite the prosecution of the Application.

Respectfully submitted,

A handwritten signature in cursive script, appearing to read "Sidney L. Weatherford".

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